**Supplementary materials**

**Molecular insights into tumor targeted therapy by carrier-free Lycorine Nanoparticles in vitro and in vivo**

Shiyue Zhou, Yuling Qiu, Rui Liu, Shuangshuang Yin, Yingying Shao, Song Wu,

Qian Chen, Tao Wang, Bo Du, Haiyang Yu

**Figure Legend for Supplementary Data**

**Supplementary Figure 1. Mean plasma concentration–time curves and *in vivo* cytotoxicity assay of Ly and DS-Ly NPs in mice plasma after intravenous** (a) Mice were given 5mg/kg of Ly and DS-Ly NPs by intravenous injection, and blood was drawn at time points of 0.83, 0.16, 0.25, 0.5,0.75, 1, 2, 4, 6, 12 and 24 h. The plasma was separated and analyzed by LC–MS/MS. The pharmacokinetic parameters determined from the study are found in Table 1. (b) Effect of Ly and DS-Ly NPs treatments on serum ALT/AST levels. \**p* < 0.05 compared to control. #*p* < 0.05 compared to control treated with Ly (Student’s t-test).

**Supplementary Figure 2. Full scans of western-blot data shown in Figure 3.** Rectangles delimit cropped areas used in the indicated panels in Figure 3.

**Supplementary Figure 3. Full scans of western-blot data shown in Figure 4.** Rectangles delimit cropped areas used in the indicated panels in Figure 4.

**Supplementary Figure 4. Full scans of western-blot data shown in Figure 5.** Rectangles delimit cropped areas used in the indicated panels in Figure 5.

**Supplementary Figure 5. Full scans of western-blot data shown in Figure 6.** Rectangles delimit cropped areas used in the indicated panels in Figure 6.

**Supplementary Figure 1**

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**Table 1 The pharmacokinetic parameters of Ly and DS-Ly NPs in mice following intravenous injection at dose of 5mg/kg (n=6)**

|  |  |  |  |
| --- | --- | --- | --- |
| Parameters | Unit | Ly | DS-Ly NPs |
| AUC (0-t) | ug/L\*h | 1326.035 ± 333.256 | 2112.674 ± 751.921 |
| AUC (0-∞) | ug/L\*h | 1335.224 ± 339.724 | 2132.8 ± 751.799 |
| MRT (0-t) | h | 1.27 ± 0.808 | 1.477 ± 0.677 |
| MRT (0-∞) | h | 1.312 ± 0.783 | 1.692 ± 0.877 |
| t1/2z | h | 1.068 ± 0.205 | 2.13 ± 1.058 |
| Tmax | h | 0.0833 | 0.0833 |
| CLz | L/h/kg | 4.027 ± 1.361 | 10.727 ± 4.822 |
| Cmax | ug/L | 1938.933 ± 380.863 | 1877.104 ± 349.578 |
| Vz | L/kg | 6.149 ± 2.107 | 31.938 ± 19.814 |

**Supplementary Figure 2**

Figure 3C



**Supplementary Figure 3**

Figure 4D



Figure 4E



**Supplementary Figure 4**

Figure 5G



**Supplementary Figure 5**

Figure 6H

